shore, and on board Her Majesty's ships 'Erebus' and 'Terror,' under the direction of Captain James Clark Ross, R.N., together with a Series of Observations made on the temperature and specific gravity of the ocean at various depths, and at the surface, namely,

"Observations of the magnetic intensity on shore, and on board H.M.S. Erebus, with needle F. 1.

"Magnetic dip observations on shore, and on board H.M.S. Erebus, with needle F. 1.

"Observations for the magnetic dip on shore, and on board H.M.S. Terror.

"Observations of the magnetic dip by needle F. C. 5. on shore, and on board H.M.S. Terror.

"Observations in magnetic intensity by needle F. C. 5. on shore, and on board H.M.S. Terror."

The whole of these observations are up to the 31st December, 1839. They are transmitted to the Royal Society from the Lords Commissioners of the Admiralty.

2. Postscript to Major Sabine's paper, entitled "Contributions to Terrestrial Magnetism," which was read at the last meeting; containing an extract from a letter from Capt. James Clark Ross, commanding the Antarctic expedition, dated from St. Helena, February 9th, 1840; noticing the success which had attended the employment of Mr. Fox's instrument, in observations of the magnetic dip and intensity on shipboard.

3. "A few remarks on a Rain Table and Map," drawn up by Joseph Atkinson, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

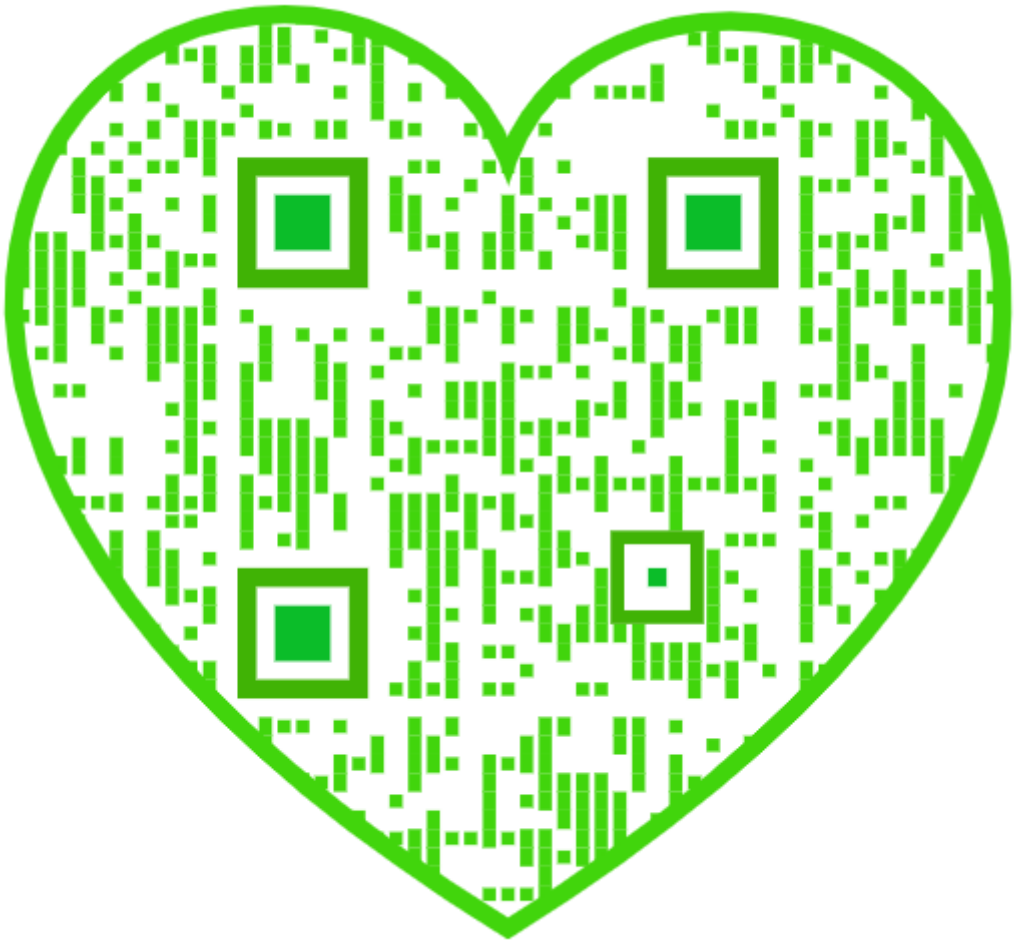
The table and map which accompany this paper exhibit the average annual depth of rain falling in different places in Great Britain.

4. "Extracts from a Meteorological Journal kept at Allenheads, in the county of Northumberland," by the Rev. W. Walton, F.R.S.

The general result of these observations, which were recorded twice each day, namely, at 9 A.M., and at 3 P.M., during the whole of the year 1839, is, that the mean temperature taken at those times was 44° 8′; the mean height of the barometer, corrected and reduced to the temperature of 32°, was 28·401 inches, and the quantity of rain in the year was 55·71 inches. The author subjoins several remarks on the conclusions deducible from an examination of the tables.

5. "Description of an Astronomical Clock invented by the late Captain Henry Kater, F.R.S.," drawn up from his own memorandums by his son Edward Kater, Esq. Communicated by Sir John F. W. Herschel, Bart., V.P.R.S.

The great object aimed at by Captain Kater in the construction of the escapement of a chronometer, is to communicate equal impulses



to the pendulum through some principle perfect in itself, and not dependent for its success on superior execution. In the escapement invented by him, the pendulum merely raises a weight, and is impelled by that weight through an increased space in its descent. It neither unlocks a detent, nor has anything to do with the train; and as the weight raised, and the spaces described, are constant quantities, this escapement is, in the strict meaning of the term, one of equal impulse.

May 7, 1840.

JOHN WM. LUBBOCK, Esq., M.A., V.P. and Treasurer, in the Chair.

John Auldjo, Esq., and William Sharp, Esq, were balloted for, and duly elected into the Society.

A paper was read, entitled "Researches in Embryology, Third Series: a Contribution to the Physiology of Cells." By Martin Barry, M.D., F.R.S., F.R.S.E., Fellow of the Royal College of Physicians in Edinburgh.

In the second series of these researches, the author had traced certain changes in the mammiferous ovum consequent on fecundation. The object of his present communication is to describe their further appearances obtained by the application of higher magnifying powers; and to make known a remarkable process of development thus discovered. In order to obtain more exact results, his observations were still made on the same animal as before, namely, the rabbit, in the expectation that, if his labours were successful, it would be comparatively easy to trace the changes in other mammals. By pursuing the method of obtaining and preserving ova from the Fallopian tube which he recommended in his last paper, he has been enabled to find and examine 137 more of these delicate objects; and has thus had ample opportunity of confirming the principal facts therein stated. He has now procured in all 230 ova from the Fallopian tube. But being aware that repeated observations alone do not suffice in researches of this nature, unless extended to the very earliest stages, he again specially directed his attention to the ovum while it is still within the ovary, with a view to discover its state at the moment of fecundation, as well as immediately before and after that event.

The almost universal supposition, that the Purkinjian or germinal vesicle is the essential portion of the ovum, has been realized in these investigations; but in a manner not anticipated by any of the numerous conjectures which have been published. The germinal vesicle becomes filled with cells, and these again become filled with the foundations of other cells; so that the vesicle is thus rendered almost opake. The mode in which this change takes place is the